Missile Defense Agency on target with Kyma's GaN

Kyma is working on a boule growth approach, which they believe will enable cost, performance, and reliability improvements for new nitride semiconductor devices. Pictured is Kyma's VP of Engineering, Dr Ed Preble.

Kyma Technologies Inc, Raleigh, USA, has been selected for two new Phase I SBIR projects under the Missile Defense Agency (MDA) SBIR/STTR program. Each program is focused on the development of native GaN materials and devices for next generation military radar systems.

Drew Hanser, company co-founder and CTO, said: "These two Phase I SBIR wins and our recently awarded Phase II STTR are all associated with our continuing push to improve the size, quality, and availability of semi-insulating GaN for high-power high-frequency (HPHF) microelectronics applications. Currently the U.S. Department of Defense is pursuing the development of high performance GaN based field effect transistor (FET) device technologies for next generation x-band radar and other HPHF military applications. We believe that native GaN has all the physical properties necessary to enable the high performance and reliability levels required for such applications. In parallel with our materials improvement efforts, our collaboration partners are helping us pursue device level validation of the benefits of native GaN and have already shown excellent preliminary results across a broad range of device types, including APDs, FETs, laser diodes, LEDs, and Schottky diodes."

Company president and CEO Keith Evans said: "MDA's support has enabled us to demonstrate semi-insulating native GaN substrates with low defect density, high thermal conductivity, and high electrical resistivity, and has helped us establish strategic collaborations with several leading government and academic research groups. We are thankful for the efforts of our collaboration partners at Air Force Research Laboratory (AFRL), Auburn University, Duke University, Georgia Institute of Technology, Naval Research Laboratory (NRL), North Carolina State University, Penn State University Electro-Optics Center, and Rensselaer Polytechnic Institute, for their important contributions to recent advances in native GaN based materials and devices, and for the continuing support of MDA."

For more details, visit: www.kymatech.com

Merger completed

Rudolph Technologies Inc announced on February 15, 2006 that its merger with August Technology Corporation was completed.

Rudolph Technologies will continue to be headquartered in Flanders, New Jersey, USA and will also have operations in Minnesota, Massachusetts and Texas. Upon completion of the merger, each share of August Technology common stock was cancelled and converted into the right to receive either $10.50 in cash or 0.7625 of a share of common stock, par value $0.001 per share, of Rudolph (the "Rudolph common stock"), or a combination of cash and Rudolph common stock. Paul F. McLaughlin, chairman and CEO of Rudolph Technologies, said: "August and Rudolph have gained an increased fab presence for their new products aimed at the emerging high-growth front-end macro defect inspection market. Similarly, both companies have introduced new technologies for bump inspection, automatic defect classification and yield management applications. We believe that by leveraging the front and back-end knowledge of the combined companies, the new entity will hold a unique position as a leading provider of one of the broadest and most complete process control offerings in inspection and metrology solutions."

. . . and more from Kyma

Kyma Technologies Inc has improved its semi-insulating (SI) GaN substrates and added a new product line based on non-polar and semi-polar GaN substrates.

The new SI GaN substrates are characterised by highly uniform electrical resistivities above 10^5 Ω-cm. According to Dr Ed Preble, Kyma's VP of engineering, Kyma has optimised its SI GaN boule growth process to effectively eliminate the conductive regions which can limit the resistivity uniformity of SI GaN substrates. Kyma's new non-polar and semi-polar products were developed in response to industry interest in the potential for such orientations to lead to new nitride semiconductor devices. By eliminating or reducing the presence of built-in electric fields in the device layers grown on top, non-polar and semi-polar GaN substrates have the potential to enable higher operating efficiencies in optical devices including blue, green, and ultraviolet LDs and LEDs. Also, by eliminating the presence of induced charge, non-polar and semi-polar GaN substrates may enable the development of high performance enhancement-mode GaN transistors, which could become important for many high frequency and high power electronics applications.

Additionally, non-polar GaN substrates may prove important for improved p-type doping efficiencies, which could benefit many device applications including avalanche photodiodes, LDs, LEDs, and heterojunction bipolar transistors (HBTs).